



# Mill Creek Watershed Project

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- Drains to Chattahoochee
- Proximity to Columbus
- Urban watershed



# Mill Creek Restoration Project

by José J. Cañedo and Katie L. Dylewski

Chattahoochee River Warden  
Auburn University



## Schools

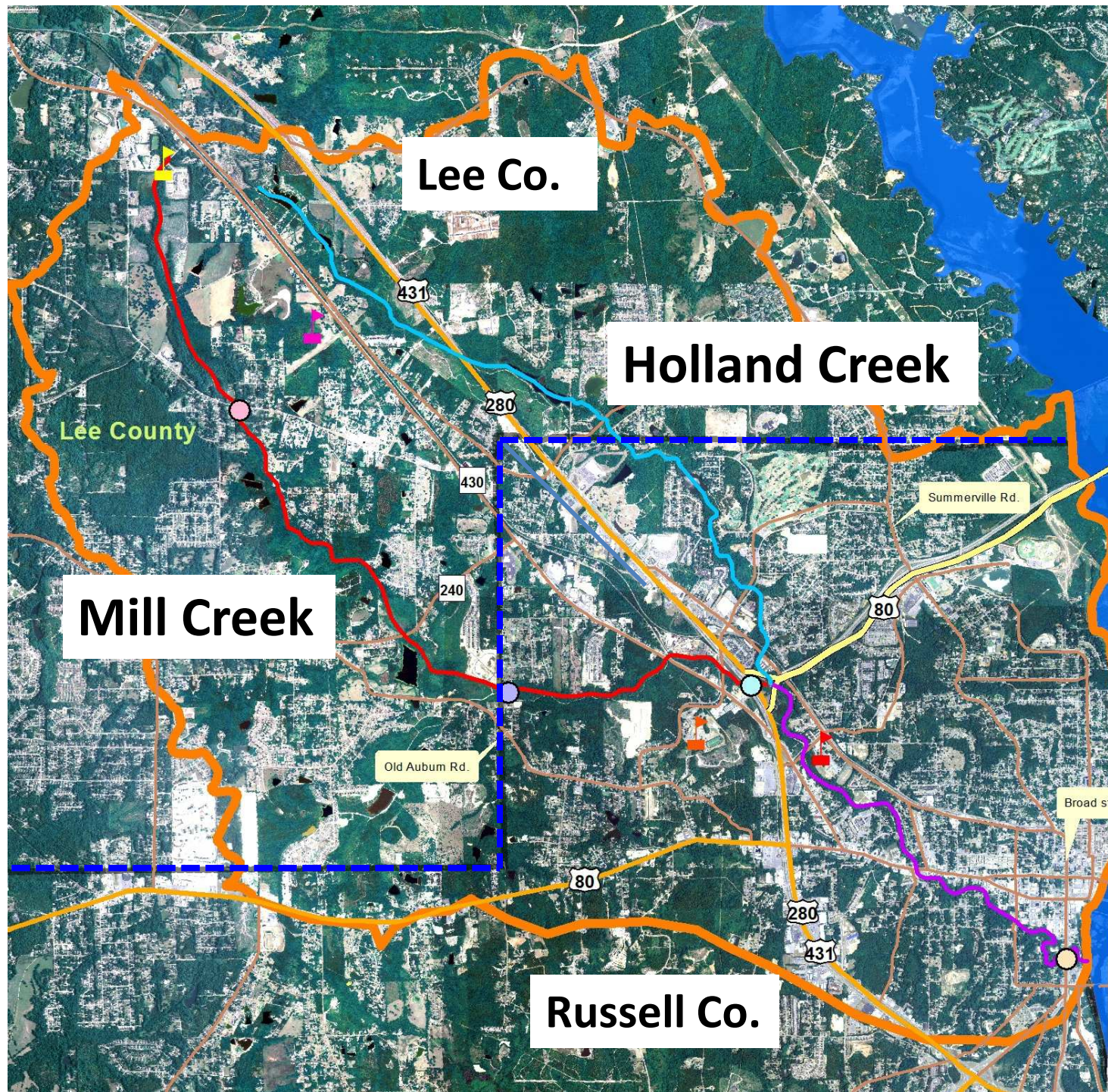
- Central High School
- Phenix City Intermediate School
- Smiths Station Elementary
- Smiths Station High School

## Test Site

- Cha-1
- Cha-2
- Micr-1
- Micr-2
- Holland Creek
- Mill Creek
- Confluence
- Watershed Boundary

0 500 1,000 2,000 Meters

This map delineates the watershed for Mill Creek, a tributary to the Chattahoochee River at Phenix City Alabama. Mill Creek and Holland Creek are both shown on this map in red and blue respectively. After their confluence they are pictured in purple down to the Chattahoochee River. Also shown in this map are schools located near the creek, test site locations and major roads. Aerial photography is from November 2007 and does not show any development that has occurred since then.





# Mill Creek

- 303(d) list – since 2006
- TMDL draft 2015
- Organic enrichment/Low DO
- Sediment issues
- High *E. coli* counts

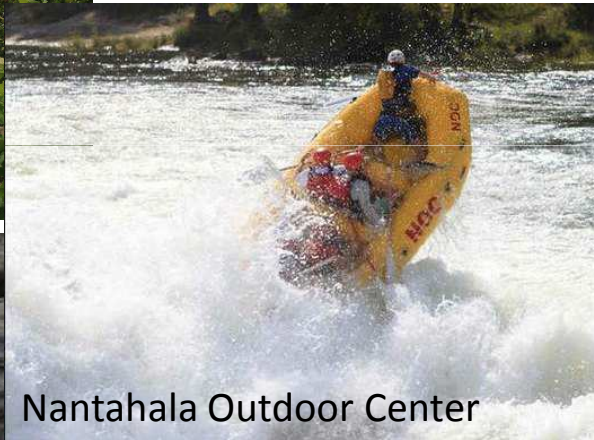




# Whitewater Course



- Longest urban course in the WORLD (2.5 mi)



Nantahala Outdoor Center

- 13,000 cfs at high flow



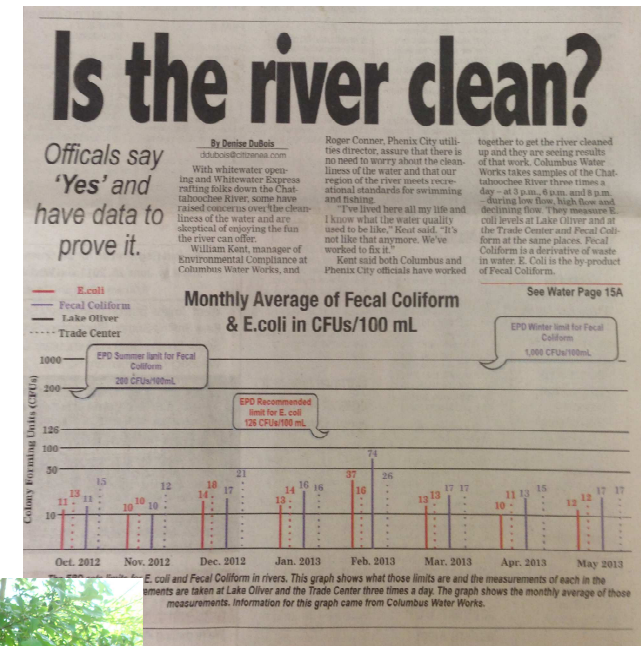
Columbus Ledger-Enquirer

- Economic Development

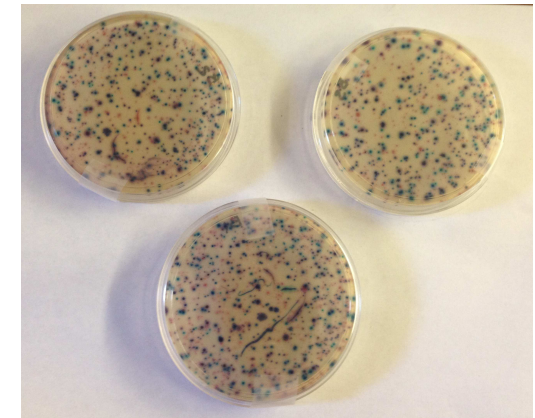
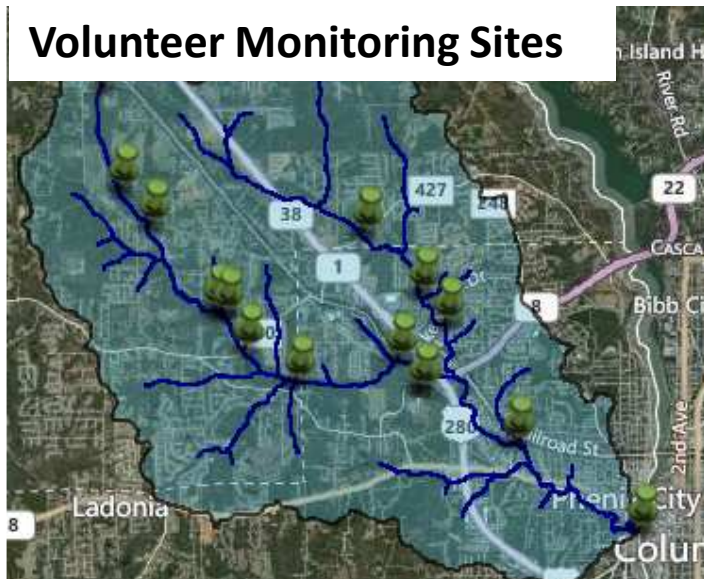


# Linking WQ to Economic Development

- Growing interest
- Is the river CLEAN?
- Concerns for *E. coli* locally
- Citizen WQ monitoring



## Volunteer Monitoring Sites





# A Watershed... Divided

- Section 319 grant
- Watershed plan – 2010
- Separate stakeholder meetings
- Councils and commissions, 4 entities
- Historical rivalry, some challenges
- Neutral ground needed





# Ask for Help

- Assign tasks to other team members
- Create committees
- Kick Off meeting
- Find those STAR players





# Assess Your Audiences

- Where's the creek?
- Old timers remember
- Local kids unsure
- EDUCATION NEEDED!



Mill Creek Watershed Introduction



69 views





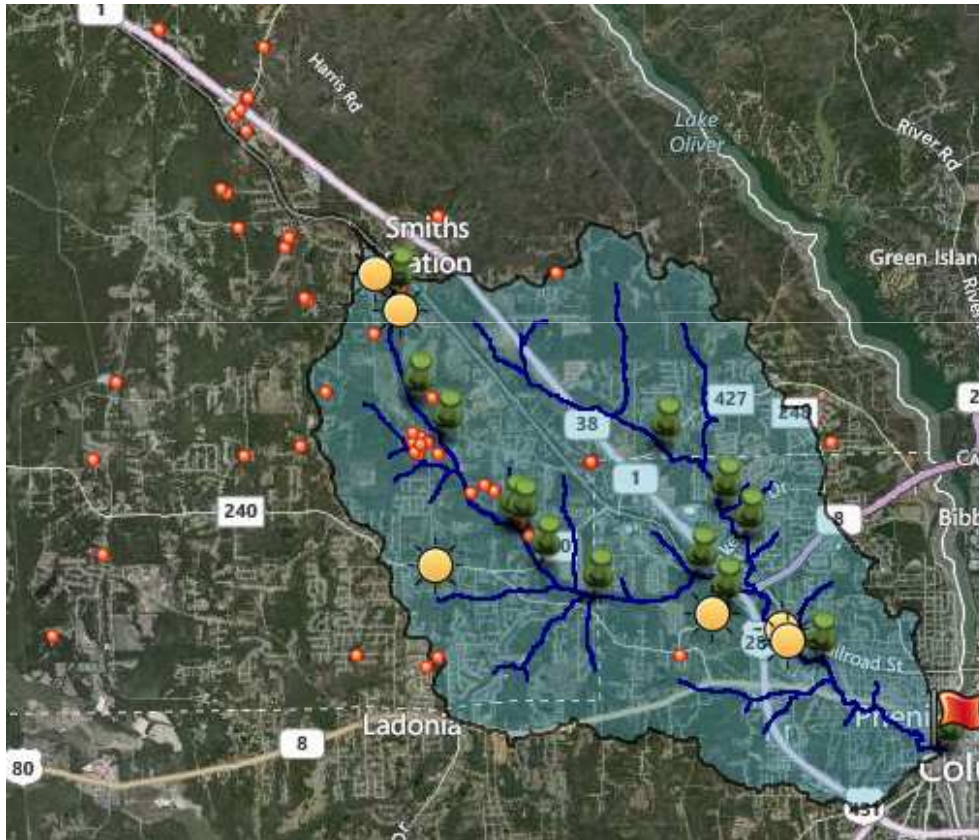
# Adult Education

- Rain Barrel Workshops
- Landscape Maintenance
- Lunch and Learn Series
- Trash Clean Ups
- Local Access TV
- Lookie-Lous





# Septic Tank Pumpout Program



- \$200 vouchers
- Two workshops
- 68 vouchers redeemed
- Targeted mailing
- Waived hauling fees





# Meaningful Projects

- Don't force it
- Match the need with the opportunity
- Phase I – mostly local schools
- City/County properties
- Generate public interest





# Site 1: East Smiths Station Elementary School





# Construction









# Pollutant Load Reductions

Practice	Nitrogen	Phosphorus	BOD	Sediment
Bioretention	4.0 lbs/yr	1.3 lbs/yr	0 lbs/yr	0.1 tons/yr
Slope Stabilization	0 lbs/yr	0.4 lbs/yr	0 lbs/yr	0.2 tons/yr
Gully Stabilization	18.5 lbs/yr	6.2 lbs/yr	53.5 lbs/yr	2.0 tons/yr
<b>Total Reductions</b>	<b>22.5 lbs/yr</b>	<b>7.9 lbs/yr</b>	<b>53.5 lbs/yr</b>	<b>2.3 tons/yr</b>

**Percent  
Reductions**

**~13%**

**~26%**

**~ 86%**

**~ 68%**



## Site 2: Smiths Station Junior High School



### Pollutant Load Reductions

Practice	Nitrogen	Phosphorus	BOD	Sediment
Stabilized Channel	1.7 lbs/yr	0.6 lbs/yr	4.9 lbs/yr	0.2 tons/yr

**Percent Reductions    ~15%       ~30%       ~ 10%       ~85%**



## Site 3: Central High School in Phenix City



Before



8 months post installation

### Pollutant Load Reductions

Practice	Nitrogen	Phosphorus	BOD	Sediment
Stabilization	0 lbs/yr	0.6 lbs/yr	0 lbs/yr	0.3 tons/yr
Percent Reductions	~0%	~21%	~0%	~85%



## Site 4: Lee Co. Solid Waste in Smiths Station



### Pollutant Load Reductions

Practice	Nitrogen	Phosphorus	BOD	Sediment
Wet Swale	2 lbs/yr	0.2 lbs/yr	0 lbs/yr	0.1 tons/yr
Percent Reductions	~40%	~20%	~0%	~80%



## Site 5: Phenix City Intermediate School



### Pollutant Load Reductions

Practice	Nitrogen	Phosphorus	BOD	Sediment
Bioretention	0.4 lbs/yr	0.1 lbs/yr	0 lbs/yr	0 tons/yr

Percent Reductions    **~43%**      **~81%**      **~0%**      **~0%**

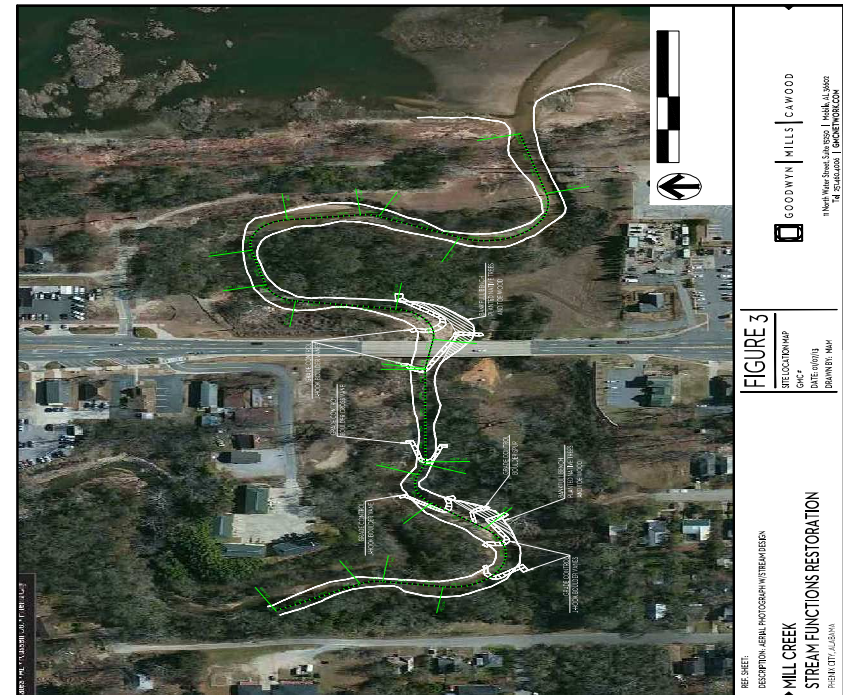


# Holland Creek Enhancement



Alabama A&M and  
Auburn Universities

- Leveraged Funding
- 700 linear feet
- Stabilization
- Protect infrastructure
- Increase oxygen
- Improve habitat



NFWF







**Upstream of Broad St. Bridge - Before**



**Upstream of Broad St. Bridge - After**



**Upstream of Broad St. Bridge - Before**



**Upstream of Broad St. Bridge - After**





Before

## Site 6: Holland Creek Enhancement in Phenix City



6 months post installation



NFWF

### Pollutant Load Reductions

Practice	Nitrogen	Phosphorus	BOD	Sediment
Stream Restoration	227 lbs/yr	87 lbs/yr	454 lbs/yr	123 tons/yr
<b>Percent Reductions</b>	<b>~8%</b>	<b>~15%</b>	<b>~4%</b>	<b>~65%</b>



# Success Breeds Success

- Phase II grant
- Focus on pollutant load reductions
- Leveraged funding opportunities
- Expand partnerships

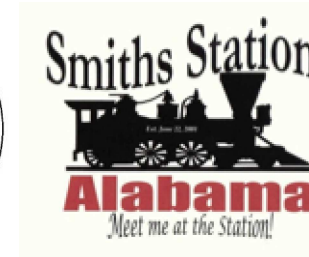




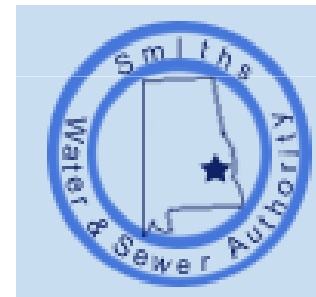
# THANK YOU, PARTNERS!



Alabama A&M and  
Auburn Universities



NFWF

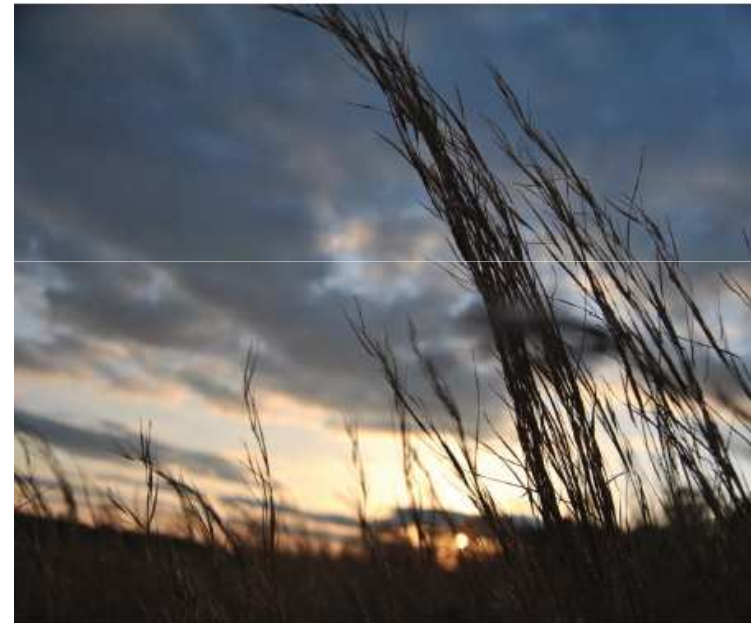




# Low Impact Development Summit

- **When:** April 9 – 10
- **Where:** Alabama Power Water Course; Clanton, AL
- **More information:**  
[www.aces.edu/lid](http://www.aces.edu/lid)

Low Impact Development Handbook  
for the State of Alabama



Alabama Department of Environmental Management  
Alabama Cooperative Extension System  
Auburn University



# Thank You!

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